ASTD/TDI Project Static Report

In Situ Redox Manipulation for Groundwater Remediation 100D Area - The Final Solution

Focus Area: Subsurface Contaminants Focus Area
TTP No.: RL09SS31
Lead Site: Richland
Project No.: 99-ASTD-37
Tech ID/TMS No.: 15
Related Publication(s): None
Web Page(s):

Focus Area Manager: Carl Lanigan, (803) 725-0404
Principal Investigator: Jonathan Fruchter, (509) 376-3937

Technology Vendor(s)/Commercial Partner(s):
No Commercial Vendor (PNNL), EM-50

Description: In Situ Redox Manipulation (ISRM) involves creation of an in situ permeable treatment zone by injecting a reducing agent (sodium dithionite) into the subsurface. Because unconfined aquifers are usually oxidizing and many of the contaminants in these aquifers are mobile under oxidizing conditions, appropriate manipulation of the redox potential can result in the immobilization of inorganic contaminants (chromium+6 at Hanford). The concept requires the presence of iron, which is reduced from its natural oxidized state in the sediments. After the reducing agent is injected, the reaction products are withdrawn through extraction wells. Once the treatment zone is installed, no further pumping or aboveground treatment is required.

Application: ISRM can be used to treat groundwater contaminated with redox sensitive contaminants.

Location(s): Hanford

Technology(ies):

In Situ Redox Manipulation

	Funding ($K):	FY-98	FY-99	FY-00	FY-01	Total
TTP No.:	RL09SS31	$0	$340	$1,160	$0	$1,500
Leverage Source:	EM-40					$1,500
					Funding Total ($K):	$3,000

Cost Savings ($M):	Proposal	Deployment Plan/TTP	Current Focus Area Projection
	Pending	Pending	$11,500